(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
24 January 2002 (24.01.2002)

PCT

(10) International Publication Number
WO 02/06978 A2

(51) International Patent Classification[7]: G06F 17/00

(21) International Application Number: PCT/GB01/03167

(22) International Filing Date: 13 July 2001 (13.07.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/616,846 14 July 2000 (14.07.2000) US

(71) Applicant and
(72) Inventor: **QUEISSER, Derek, Michael, Erskine** [CH/GB]; 12 Gerald Road, London SW1W 9EQ (GB).

(74) Agent: **LUCAS, Brian, Ronald**; Lucas & Co., 135 Westhall Road, Warlingham, Surrey CR6 9HJ (GB).

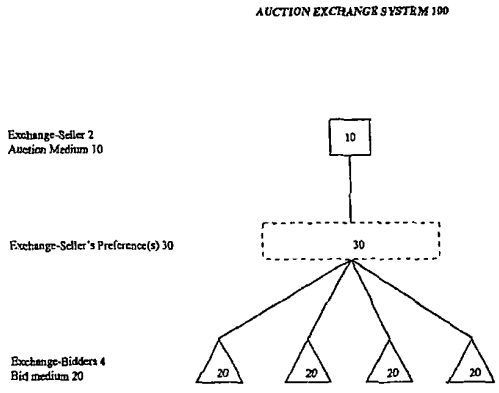
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND SYSTEM FOR NON-MONETARY EXCHANGE OF GOODS AND SERVICES



(57) Abstract: A method and system are disclosed for non-monetary exchange of goods and services. In one embodiment, an auction exchange system allows an exchange seller to offer a product or service medium in exchange for another product or service. The exchange seller may define certain preferences for the exchange. Exchange bidders then bid on the offered product or service by matching the preferences or offering other products or services in exchange. When a seller accepts a bid, the auction exchange system allows the exchange seller to aggregate the matching bids into a database, or "basket." The users of the auction exchange system have the option of obtaining a third party valuation of goods and services which are offered or bid. A flat fee for each unit of an offer is levied to the exchange seller. Likewise, a flat fee for each unit of a bid is levied to the exchange bidder. If a bid is rejected, the exchange bidder has the option of offering the bid product or service for exchange in a second auction without being charged the additional fee.

WO 02/06978 A2

METHOD AND SYSTEM FOR NON-MONETARY EXCHANGE OF GOODS AND SERVICES

This invention relates generally to electronic commerce, in particular to a method for exchanging goods and/or services among remote users using a personal computer, and the like.

Ancient civilizations relied upon the marketplace to exchange goods and services to match their needs. The marketplace required individuals to physically gather together in order to display what they were offering and to inspect what they could obtain in an exchange. After some bargaining, goods or services were exchanged.

The ancient marketplace was an integrative system of economics which relied on a direct matching of needs through a means of an exchange, or barter systems. These systems were, however, generally inefficient due to geographical limitations which allowed only local merchants to participate in trading. Geographical limitations, in turn, resulted in fewer participants in the system and required specialization among merchants to match the needs of other local merchants. Each merchant would provide a particular medium to be exchanged in order to match the needs of as many other merchants as possible to maximize his chances of exchanging goods or services.

Over time, cash systems developed to increase the efficiency of the ancient marketplace. By creating an intermediate medium (i.e. cash) to exchange for goods and services, merchants were no longer required to directly match each other's needs in the marketplace. Instead, money could be exchanged for almost anything offered at the market.

With the advent of money in the marketplace, the value of goods and services in the market began to rely on a third party or supply-demand relationship. As a result, the integrative system of economics which used to rely on a matching of needs gave way to a distributive system. The outcome of a distributive or supply-demand relationship is a "price" which defines the monetary value of goods and services at any given time. While this provides flexibility, it also creates the incentive to accumulate as much of the monetary medium as possible during every transaction in order to increase the chance of meeting future needs.

There have been several attempts to introduce auction systems to the Internet. For example, U.S. Patent No. 6,006,201 issued to Berent, et al. discloses an on-line

motor vehicle auction and information system which allows remote users to obtain information about motor vehicles and to participate in the auction of motor vehicles by using a personal computer. While this system allows remote users from a wide geographical range to participate in the auction, it is limited to the sale of motor vehicles and includes the exchange of a dollar amount for a motor vehicle purchased by a user during the sale.

U.S. Patent No. 5,966,699 issued to Zandi, et al. discloses a computer system for conducting an electronic loan auction over a computer network. The computer system includes the submission of a loan application to several lenders who may bid for the borrower's business. The system is expressly limited to a loan application processing.

More recent patents include several patents issued to Walker, et al. For example, U.S. Patent No. 5,897,620 discloses a method for matching unspecified time airline tickets by examining flight availability and notifying a purchaser of the selected flight. The object is to provide airline tickets corresponding to special fare listings without a specified departure time. However, the system is limited to the sale of airline tickets for cash or charge to a credit card. The purchaser does not have the ability to select the airline.

U.S. Patent No. 6,041,308 issued to Walker et al. discloses a method for processing the sale of products to buyers who have submitted a conditional purchase offer. This method is described as a "buyer driven" system in which buyers set the conditions of the sale. The method is also limited to cash bids. Additionally, the system awards compensation such as cash or prizes to rejected bidders in order to stimulate demand and curb dissatisfaction.

U.S. Patent No. 5,794,207 issued to Walker et al. is directed to a network system to facilitate buyer-driven conditional purchase offers. According to this system, the buyer communicates a binding purchase offer to potential sellers in search for potential buyers. The system is limited to offering a price for goods and services rather than an exchange.

Thus, there exists a need for a system that offers greater flexibility for its users and is not dependent on third party valuation. There is also a need for a more efficient system which allows users to directly match the needs of other users and thereby avoid sensitivity to economic conditions.

The present invention relates to an improved method and system for auctioning items by an electronic exchange that is designed to overcome the

described problems associated with conventional systems of electronic commerce. The invention utilizes the unlimited geographical scope provided by the Internet to bypass the need for money or its equivalent to make possible a direct matching of the needs of its users. As a result, the present invention is less sensitive to economic conditions.

Advantageously, the invention increases the flexibility of an exchange transaction by allowing a seller to define the auction medium and specify the items which the seller prefers to receive in exchange for the auction medium. One or more participating bidders may then match the seller's preferences or describe other items that the bidder is willing to offer in exchange. The invention allows the auction participants to offer or bid as many units of an auction or bid medium as they wish and eliminates the need for an exchange of money or any substitute such as "barter dollars." As such, there is no requirement for a third party valuation of auction items which enables the participants to directly match each other's needs. For comparative purposes, however, the system allows the participants to obtain an independent third party valuation of auction items.

The auction system of the invention may require each seller and bidder to pay a fee to a host computer network for participating in the auction. The seller's fee is calculated by multiplying a flat nominal fee per unit of auction medium offered by the seller. The flat nominal fee is determined by the host computer network. Similarly, the bidder's fee is calculated by multiplying a flat nominal fee per unit of bid medium. The bidder may bid for some or all of the auction medium and the seller may accept some or all of a particular bid. In the event that the seller rejects a bid, or a portion of a bid, the system provides the bidder with the option of making another bid or offering the rejected bid for auction without payment of an additional fee.

For a better understanding of the present invention reference will now be made, by way of example, to the accompanying drawings in which:

Figure 1 is a schematic block diagram illustrating an embodiment of an auction exchange according to the present invention;

Figure 2 is a flowchart diagram illustrating a feedback mechanism according to the present invention;

Figure 3 is a schematic block diagram illustrating a unit-driven value definition for a fee calculation method;

Figure 4 is a flowchart diagram illustrating an auction feedback exchange;

Figure 5 is a schematic block diagram illustrating a sorting mechanism for divisible or non-divisible goods;

Figure 6 is a flowchart diagram illustrating a link to third party value definition;

Figure 7 is a schematic block diagram illustrating a basket aggregation exchange;

Figure 8 is a flowchart diagram illustrating a basket auction feedback exchange;

Figure 9 is a schematic block diagram illustrating individual entities in a transactional setting;

Figure 10 is a flowchart diagram illustrating a general overview of a method of exchanging goods and services according to an embodiment of the present invention;

Figure 11 is a schematic block diagram illustrating an exchange auction management system according to an embodiment of the present invention;

Figure 12 is a flowchart diagram illustrating an exchange auction process according to an embodiment of the present invention;

Figure 13 is a schematic block diagram illustrating a database of exchange sellers and exchange bidders;

Figure 14 is a flowchart diagram illustrating a sorting method;

Figure 15 is a flowchart diagram illustrating a method of third party valuation;

Figure 16 is a schematic block diagram illustrating a basket aggregation method;

Figure 17 is a schematic block diagram illustrating a basic input form describing the physical and legal parameters of a given transaction;

Figure 18 is a schematic block diagram illustrating a medium description

method;

Figure 19 is a schematic block diagram illustrating a bearer medium note;

Figure 20 is a schematic block diagram illustrating an exchange seller's preferences;

Figure 21 is a schematic block diagram illustrating a general viewing page layout;

Figure 22 is a schematic block diagram illustrating an exchange seller's viewing page layout; and

Figure 23 is a flowchart diagram illustrating an auction exchange according to an embodiment of the present invention.

As shown in Figure 1, an exchange seller **2** is interested in offering an auction medium **10** in exchange for another medium, or bid medium **20**. The auction medium **10** can be anything of value to an exchange seller **2** who is interested in the exchange. Therefore, the exchange seller **2** may access an exchange auction system **100** by registering and otherwise providing any preliminary or identifying information required by the exchange auction system. Such information would include, but is not limited to, an identification of the auction seller, a description of the auction medium and, optionally, an identification of preferences **30** that the auction seller would like to receive in exchange for the auction medium. The exchange seller may be charged a fee for participating in the exchange auction system **100**. However, the fee is discretionary and is dependent upon the exchange auction system and its method of generating revenue in exchange for access to the system.

An exchange bidder **4**, who also has something of value that he or she is willing to exchange, may then access the exchange auction system **100** to view a description of the auction medium **10** which has been offered by an exchange seller as well as the exchange seller's preferences **30** if any. Initially, the auction bidder may be required to review a description of the various auction media which is then available for exchange and then make a selection of a specific auction medium. If the exchange bidder **4** is interested in an exchange, he or she may enter a bid medium **20** in exchange for the auction medium **10**. It is not necessary for any bid medium **20** to directly match any of the preferences **30**. Similarly, the exchange bidder **4** may also be charged a fee for participating in the exchange auction system **100**.

In this embodiment, the exchange auction system **100** is a host computer network which enables auction participants to electronically access auction

information and to electronically participate in all aspects of an auction transaction. The exchange auction system **100** includes a database server means to electronically store the auction data entered by the auction seller and the auction bidder. The exchange seller **2** and exchange bidder **4** gain access to the exchange auction system **100** from computer workstations that are linked to exchange auction system by communications network means. The system components and related network means to implement this embodiment of the invention are within the skill of the ordinary information systems expert. Moreover, the invention is not limited to this embodiment and is intended to include applications involving any type of electronic exchange of information.

In response to an auction medium **10** of interest, the exchange bidder **4** enters a description of bid medium **20**. An exchange seller **2** has the option of accepting or rejecting some or all of a given bid medium **20**. The exchange auction system **100** uses a feedback mechanism **12** which is illustrated in Figure 2. The feedback mechanism **12** identifies an accepted bid medium **40** and allows a rejected bid medium **50** to subsequently become an auction medium **10**. The purpose of the feedback mechanism **12** is to ensure that each exchange bidder **4** has the option of participating in a transaction within two rounds of bidding, if he chooses to do so, when the bid medium **20** was rejected in the first auction. If the exchange seller **2** rejects the bid medium **20**, the exchange auction system **100** identifies the rejected bid medium **50**. If the time allocated for a given auction has not expired, the exchange bidder **4** has the option of submitting an adjusted bid. During the auction transaction, the exchange seller **2** and the exchange bidder **4** may communicate by E-mail or other means of communication to provide details about the auction medium **10**, bid medium **20** or other information.

At the end of an auction, the exchange bidder **4** has the option of offering any rejected bid medium **50**, or portion thereof, as an auction medium **10** in another auction without payment of an additional fee. In the event that the exchange seller **2** accepts the bid medium **20**, the exchange bidder **4** is notified by the auction exchange system provider and the exchange seller **2** and exchange bidder **4** arrange for the exchange.

In one embodiment of the invention, there is a fee for participating in the exchange auction system **100** which is paid to the auction exchange system provider **110**. The total compensation **82** for the system provider is calculated using a unit-driven value definition **14** which is set forth in Figure 3. The first step in determining

the total compensation **82** is to multiply a flat nominal fee per unit offered **60** by the number of units of auction medium **10**. The flat nominal fee is determined by the exchange auction system. The second step is to multiply a flat nominal fee per unit bid **70** by the number of units of bid medium **20**. The sum of these two calculations provides the total compensation **82** to be paid by the auction participants to the system provider. If there is a successful monetary component to an auction medium **10** or a bid medium **20**, the fee calculation **80** is based on a percentage of that monetary component.

The auction feedback exchange **16** illustrated in Figure 4 allows a rejected bid medium **50** to become an auction medium **10**. This auction feedback exchange **16** incorporates the feedback mechanism **12** which identifies an accepted bid medium **40** and allows a rejected bid medium **50** to become an auction medium **10**. The feedback mechanism **12** ensures that each exchange bidder **4** has the option of participating in a transaction within two rounds of bidding, if he chooses to do so, when the bid medium **20** was rejected in a preceding auction. New exchange bidders **4** will then have access to the auction medium **10** and begin another round of bidding. In the event that the exchange seller **2** accepts the bid medium **20**, the exchange bidder **4** will be notified and the exchange seller **2** and exchange bidder **4** can arrange for the exchange.

As shown in Figure 5, the exchange auction system **100** utilizes a sorting mechanism **22** to sort accepted bid medium **40** and rejected bid medium **50**. In the event the exchange seller **2** offers multiple units of auction medium **10**, the exchange bidder **4** will have the opportunity to bid for a portion of the auction medium **10**. As shown in Figure 5, each of the exchange bidders **4** has made a bid **20** for 10% of the auction medium. The sorting mechanism **22** then divides the auction medium **10** among the exchange bidders **4** who have made accepted bids **40**. The rejected bid medium **50** is then available for a second round of the auction exchange system **100**.

In the event that the participants would like to assess or compare the value of auction medium **10** and bid medium **20**, the exchange auction system provides access to independent third party valuations for the auction medium **10** and the bid medium **20**. As shown in Figure 6, the third party valuations **92**, assist the exchange seller **2** and the exchange bidder **4** in making their decisions concerning the value of the exchange. The exchange seller **2** and the exchange bidder **4** may review the third party valuations **92** to make a value based comparison **90** of the auction medium **10** and the bid medium **20**.

Figure 7 shows a basket aggregation exchange **84**. Once the exchange seller **2** decides that a certain bid medium **20** matches his needs, the exchange seller **2** will accept the bid medium **20** so that some or all of the auction medium **10** is debited or removed from the offer.

Figure 8 shows a basket auction feedback exchange **86** which allows the exchange seller **2** and the exchange bidder **4** to interact with equal bargaining power. For example, it allows an individual to deal with a nation-state entity in the same manner that a corporate entity would deal with a nation-state entity. The number of units of auction medium **10** and bid medium **20** define the value of the exchange rather than the monetary value of the transaction.

Figure 9 shows the relationship between the auction medium **10** and the bid medium **20** which is sorted using a sorting mechanism **22**.

The flow of information in the exchange auction system **100** is illustrated in Figure 10. The auction medium **10** and the bid medium **20** are first displayed on a site gate **300**. In the first stage of the auction, an individual or entity will enter the site through the site gate **300** in order to either put a medium on offer as an exchange seller **2**, to place a bid as an exchange bidder **4**, or to simply view past or pending offers. To enter an auction medium **10**, the exchange seller **2** may be required to pay a flat nominal fee per unit offered **60**. Similarly, to place a bid medium **20** for auction, the exchange bidder **4** may be required to pay a flat nominal fee per unit bid **70**. In one embodiment, there may also be a requirement for credit card payment **200** which is fed back to the exchange auction system **100** to identify the exchange seller **2** and the exchange bidder **4** and provide a method of payment. Other payment methods may also be used in the system. Both the exchange seller **2** and the exchange bidder **4** will interact through the exchange auction system **100**. The second stage of the auction is also illustrated where an exchange bidder **4** has the option of becoming an exchange seller **2**.

The connections of the various components of the exchange auction system **100** are illustrated in Figure 11. A central processing unit (CPU) **102** is linked to a third party valuation **92** and a database **104** containing a description of all offered mediums **10** and the corresponding bid medium **20** which are sorted by the sorting mechanism **22**. The CPU **102** is also linked to E-mail **106** or other means of communication among the users. The exchange auction system **100** stores any data exchanged between the exchange seller **2** and the exchange bidder **4** in a storage database **108** for future reference or proof of transaction.

The interactions which take place in the exchange auction system **100** are illustrated in Figure 12. This figure represents the exchange auction process **101** including the interactions between the exchange seller **2** and the exchange bidder **4** which are performed via E-mail **106** or other means of communication processed through the CPU **102**. The third party valuation **92** can be accessed by the exchange seller **2** and exchange bidder **4** during the exchange auction process **101**. Any bid medium **20** which has been sorted by the sorting mechanism **22** and identified as accepted bid medium **40** or rejected bid medium **50** will be stored in a database **104** in the CPU **102**. The exchange auction process **101** also includes the option for the exchange bidder **4** to offer rejected bid medium **50** as the auction medium **10** in another auction.

Additional databases **130, 140** which may be accessed during the exchange auction process **101** are illustrated in Figure 13. These include a database of all offered mediums **130** and a database of all bids **140**. Based on the information in the additional databases **130, 140**, the fee calculation **80** can be performed. The auction exchange system provider **110** has the discretion to allow the data in the CPU **102** and additional databases **130, 140** to be viewed by any new entrant to the site **300**.

The details of the sorting mechanism **22** are shown in Figure 14. The sorting mechanism **22** enables the exchange seller **2** to define the auction medium **10** using a medium description **600**, and the number of units **700** of auction medium **10** put on offer. When appropriate, the exchange seller **2** must also specify the type of units being offered (e.g. kg, liters, etc.). The exchange seller **2** may also specify preferences **30** for exchange including a medium description **600** for the preference **30**. The exchange auction system **100** enables an exchange bidder **4** to enter a bid medium **20** and define it using the same medium description **600** and, when appropriate, to indicate the number of units **700** of the bid medium **20**. The exchange bidder **4** must also specify the type of units used for the bid medium **20**. If desired, the exchange seller **2** and the exchange bidder **4** may assess the monetary value of the auction medium **10** and the bid medium **20** through a third party valuation **92**.

The exchange auction system **100** allows both the exchange seller **2** and the exchange bidder **4** to include a monetary component to a given auction medium **10** or a given bid medium **20**. Monetary auction medium **10** is defined according to the medium description **600** and the number of units **700** to specify both the type of currency and the amount offered. A fee calculation **80** based on a percentage of the monetary component will only be levied on the successful outcome of the

transaction.

The mechanism of obtaining a third party valuation **92** is illustrated in Figure 15. The third party valuation **92** includes direct links to monetary traded exchanges (i.e. commodities or other), comparative price search engines to assess the lowest retail price of a comparable auction medium **10** or bid medium **20**, comparative manufacturing costs, and other sources of independent appraisal. The exchange seller **2** and the exchange bidder **4** may review the third party valuations **92** to make a value based comparison **90** of the auction medium **10** and the bid medium **20**.

When an exchange seller **2** accepts a bid medium **20** for exchange, the auction exchange system **100** allows the exchange seller **2** to place accepted bids **40** into a database known as a basket aggregation database **105**. Figure 16 shows the basket aggregation database **105** which is stored in the CPU **102**. The basket aggregation database **105** matches a defined proportion of auction medium **10** with each accepted bid **40** for the exchange.

There is a basic input form **950** which may be used by an exchange seller **2** to define the transaction along two parameters. They are the physical parameter and the legal parameter. The basic input form is shown in Figure 17. Upon completion of the basic input form **950**, the system provider assigns encryption keys to the auction participant. Encryption keys represent, for example, a given user's digital signature. Specifically, the exchange seller **2** receives a physical ownership encryption key **611a** representing the physical ownership of the auction medium **10** and a corresponding legal ownership encryption key **612a** representing the legal ownership of the auction medium **10**. The exchange bidder **4** also receives a physical ownership encryption key **611b** and a legal ownership encryption key **612b** for each unit of bid medium **20** when the exchange bidder **4** completes a basic input form **950** upon registering with the host exchange network system.

Figure 18 shows a sample medium description **600** which includes at least four dimensions. They are: context **601**, medium type **602**, location of medium **603**, and the date of the medium **604**. The exchange seller **2** may define preferences **30** along the same four dimensions **601**, **602**, **603** and **604**. The exchange bidder **4** will also define a bid medium **20** along the four dimensions **601**, **602**, **603** and **604**. Additional comments **605** may be entered by either the exchange seller **2** or the exchange bidder **4**. The exchange auction system **100** may also provide a searching capability to enable the exchange seller **2** and the exchange bidder **4** to search for auction medium **10** and/or bid medium **20** according to any combination of the four

dimensions of the medium description **600**.

Figure 19 shows a bearer medium note **610** which facilitates the direct trade of information, assets and/or services in accordance with the invention. The bearer medium note **610** is defined by a description of the four given dimensions **601**, **602**, **603**, **604**, a single unit of the auction medium **10** or the bid medium **20**, as well as information about the physical ownership of the auction medium **10** or bid medium **20** and the legal ownership of the auction medium **10** or bid medium **20** at any given time. In other words, the combination of the basic input form **950**, the medium description **600**, and the type of units **701** define the bearer medium note **610**.

When an exchange seller **2** accepts and aggregates a bid, he and the exchange bidder **4** will exchange legal ownership by an electronic exchange of encryption keys **612**. This will act as an electronic authorization for the exchange. It is discretionary among the parties and depends on the nature of the auction whether the physical ownership encryption keys **611** are exchanged. The resulting encryption pairs in the bearer medium note **610** will show that the legal ownership of the auction medium **10** and, if appropriate, the bid medium **20** have been exchanged and a contract has been formed.

Figure 20 shows the preferences **30** of bid medium **20** to be received for auction medium **10**. The preferences **30** may include the number of units **700** that the exchange seller **2** would like for the exchange. The exchange seller **2** must also specify the type of units of bid medium **20** to be received.

Upon accessing the system, the exchange seller **2** may access a general viewing page layout **900**. Likewise, the exchange bidder **4** may access a general viewing page **901** which has similar components and allows the exchange bidder **4** to indicate the similarities between the auction medium **10** and the bid medium **20**. These general viewing page layouts **900**, **901** are illustrated in Figure 21 and Figure 22. The auction exchange system **100** allows a potential exchange bidder **4** to view the exchange seller's **2** auction medium **10** and preferences **30** on a general viewing page layout **901** for an exchange bidder **4**. The auction exchange system provider **110** will decide whether to allow an exchange bidder **4** view the basket aggregation database **105** of the bid medium **20** for a given auction medium **10**. The exchange seller **2** may use the general viewing page layout for the exchange seller **900** in order to decide whether to accept or reject the bid medium **20**. The auction exchange system **100** allows the exchange seller **2** to view the aggregation of the matched bid medium **20** for a given auction medium **10**.

The interaction between the exchange seller **2** and the exchange bidder **4** is represented in Figure 23. This interaction includes intermediate steps of storing information in databases, **102**, **104**, and sorting the auction medium **10** and bid medium **20** using the sorting mechanism **22**. The feedback mechanism **12** is also illustrated wherein rejected bid medium **50** becomes auction medium **10**.

In operation, the exchange auction system **100** enables individuals and entities to use the Internet or other instant communication platform to perform economic transactions without the need for an intermediary monetary medium or monetary substitute. An exchange seller **2** inputs an auction medium **10** as well as preferences **30** for exchange. An exchange bidder **4** will have the opportunity to view the auction medium **10** on a general viewing page for the exchange bidder **901** and enter a bid medium **20** for exchange by meeting one of the defined preferences **30** or by entering another bid medium **20**. In the event that a bid medium **20** is not accepted by the exchange seller **2**, the exchange bidder **4** will have the option to enter the rejected bid medium **50** as an auction medium **10** without incurring the flat nominal fee **60**.

The following are illustrative examples of the present invention.

Example 1:

Placer Dome Corporation ("Placer") is looking to enhance general productivity with the acquisition of new portable computers. Instead of using cash to purchase the computers, Placer would like to participate in the electronic auction sponsored by an accessible host computer network and offer 2,000 ounces of gold in exchange for as many portable computers in the United States as possible. Therefore, Placer enters a description of the gold in the auction as well as its preferences for the type of computers it would like to receive in exchange for the gold. Placer must also define the type of units of gold (in this case ounces). The network charges Placer a fee of $2 for each unit of gold placed on auction.

The auction is accessed by several bidders including IBM, Compaq and Nokia. Each bidder is charged a fee of $1 for each unit bid. IBM offers 300 of its 756 computers located in New York in exchange for 500 ounces of the offered gold. IBM is charged $300 for this bid. Compaq offers 350 of its 211 computers located in Houston in exchange for 550 ounces of the gold. Compaq is charged $350 for this bid. Nokia offers 3,000 of its 990 wireless phones from Finland in exchange for 510 ounces of the gold and is charged $3000.

After reviewing the bids, Placer decides to accept the bid from IBM and reject

the bids from Compaq and Nokia. According to the features of the auction, IBM and Nokia now have the option of adjusting their bids or offering their products in another auction without payment of any additional fee. The example is summarized below.

Exchange seller = Placer Dome Corporation
Exchange bidder 1 = IBM Corporation
Exchange bidder 2 = Compaq Corporation
Exchange bidder 3 = Nokia Corporation

Exchange seller's offered medium	20 carat (context) Gold (medium) in Peru (location) Units = 2,000 ounces
Preferences	Any (context) Portable Computer (medium) from U.S. (location)
Exchange bidder 1	IBM 756 computer from New York Units = 300 for Units = 500 of Offered medium (ounces of gold)
Exchange bidder 2	Compaq 211 computer from Houston Units = 350 for Units = 550 of offered medium
Exchange bidder 3	Nokia 990 Wireless Phone from Helsinki Units = 3,000 for Units = 510 of offered medium
Fees Generated	Exchange seller: 2,000 units at $2 = $4,000 Exchange bidder 1: 300 units at $1 = $300 Exchange bidder 2: 350 units at $1 = $350 Exchange bidder 3: 3,000 units at $1 = $3,000 **Total** $4,000 + 300 + 350 + 3,000 = $7,650

Example 2:

An individual would like to exchange 100 shares of Microsoft stock for 50 shares of GE stock and 20 shares of IBM stock. The individual decides to participate in an online auction as an exchange seller to reach as many potential bidders as possible. The exchange seller enters a description of the auction medium as well as his preferences for the exchange. After reviewing the auction medium offered by the individual several bidders decide to place bids for the stock. The exchange seller can review these bids and accept some or all of a given bid. Once the exchange seller accepts a portion of a bid, it is placed in a basket so that the accepted bids are stored in one easily accessible database. The invention enables a multiple, non-linear aggregation of bids within a single transactional setting. The example is summarized below.

Auction medium:	Y	100 shares of Microsoft stock
Preferences:	P1	50 shares of GE stock
	P2	20 shares of IBM stock
Bids:	x1	20 shares of GE in exchange for 17 shares of Microsoft
	x2	25 shares of GE for 19 shares of Microsoft
	x3	5 shares of IBM for 10 shares of Microsoft
	x4	15 shares of IBM for 35 shares of Microsoft
	x5	17 shares of Cisco for 22 shares of Microsoft
	x6	12 shares of ABB for 5 shares of Microsoft

Aggregated bids in basket aggregation database: (i.e. bids accepted by Exchange seller at his discretion)

$\%Y = x1 + x2 + x4 + x5 + x6$

Y = 98 Microsoft shares [98% of offer has been matched]

Basket = 45 shares of GE [linear - similar to preference P1]

15 shares of IBM [linear - similar to preference P2]

17 shares of Cisco [non-linear - different from either preference P1 or P2]

12 shares of ABB [non-linear - different from either preference P1 or P2]

CLAIMS

1. A method for auctioning items by an electronic exchange of auction information between remote users and a host auction exchange system comprising:

(a) inputting auction information by an exchange seller to the host auction exchange system about an auction medium being offered for auction, wherein the auction information comprises a description of the auction medium, and

(b) inputting bid information by at least one exchange bidder to the host auction exchange system about a bid medium being offered in exchange for the auction medium, wherein the bid information comprises a description of the bid medium, and

(c) accepting or rejecting all or some of the bid medium by the exchange seller, wherein the auction is transacted without the exchange of money between the exchange seller and the exchange buyer.

2. The method according to claim 1, wherein separate encryption means authenticate ownership of the auction medium by the exchange seller and ownership of the bid medium by the exchange bidder.

3. The method according to claim 2, wherein the encryption means are assigned by the host auction exchange system.

4. The method according to claim 2, wherein the encryption means is a digital signature.

5. The method according to claim 2, wherein the acceptance of all or some of the bid medium by the exchange seller is signified by an exchange of encryption means by the exchange seller and the exchange bidder.

6. The method according to claim 5, wherein legal ownership of the auction medium is transferred to the exchange bidder and legal ownership of the bid medium is transferred to the exchange seller with the exchange of the encryption means by the seller and bidder.

7. The method according to claim 6, wherein transfer of legal ownership is effected without transferring physical possession of the auction medium or bid medium.

8. The method according to claim 1, wherein the auction information includes a description of the auction medium and at least one preference in exchange for the auction medium.

9. The method according to claim 1, wherein the exchange seller and exchange bidder pay the host auction exchange system a fee to participate in an auction sponsored by the host computer network.

10. The method according to claim 9, wherein the fee paid by the exchange seller is calculated by multiplying a fee, as determined by the host auction exchange system, by the units of auction medium to be auctioned by the exchange seller.

11. The method according to claim 9, wherein the fee paid by the exchange bidder is calculated by multiplying a fee, as determined by the host auction exchange system, by the units of bid medium offered by the exchange bidder.

12. The method according to claim 9, wherein the exchange seller rejects the bid medium and the exchange bidder has the option to offer the rejected bid medium for auction without paying another fee.

13. The method according to claim 1, wherein the exchange seller offers multiple units of exchange medium for auction.

14. The method according to claim 13, wherein the exchange bidder offers a bid medium for some or all of the exchange medium units.

15. The method according to claim 1, wherein the monetary value of the auction medium, bidding medium or both media is determined by a third party valuation.

16. A system for auctioning items by an electronic exchange of auction information comprising:

(a) a means for inputting auction information by an exchange seller through a network to a host computer about an auction medium being offered for auction, wherein the auction information includes a description of the auction medium and at least one preference in exchange for the auction medium;

(b) a means for inputting bid information by at least one exchange bidder through the network to the host computer about a bid medium being offered in exchange for the auction medium, wherein the bid information includes a description of the bid medium;

(c) a storage means on the host computer for storing the auction information and bid information in a database;

(d) a programming means, wherein the exchange seller determines acceptance or rejection of the bid by the exchange seller and where the auction is transacted without the exchange of money between the exchange seller and the exchange buyer; and

(e) a means for transmitting and displaying through a network to the exchange seller and exchange bidder the acceptance or rejection of the bids.

17. The system according to claim 16, wherein the network comprises the Internet.

18. The system according to claim 17, wherein the database comprises a relational database.

19. The system according to claim 16, wherein separate encryption means authenticate ownership of the auction medium by the exchange seller and ownership of the bid medium by the exchange bidder.

20. The system according to claim 19, wherein the encryption means are assigned by the host auction exchange system.

21. The system according to claim 19, wherein the encryption means is a digital signature.

22. The system according to claim 19, wherein the acceptance of all or some of the bid medium by the exchange seller is signified by an exchange of encryption means by the exchange seller and the exchange bidder.

23. The system according to claim 22, wherein legal ownership of the auction medium is transferred to the auction seller and legal ownership of the bid medium is transferred with the exchange of encryption means.

24. The system according to claim 23, the transfer of legal ownership is effected without transferring physical possession of the auction or bid medium.

25. The method according to claim 16, wherein the auction information includes a description of the auction medium and at least one preference in exchange for the auction medium.

26. The system according claim 16, wherein the exchange seller and exchange bidder pay the host computer a fee to participate in an auction sponsored by the host computer.

27. The system according to claim 26, wherein the fee paid by the exchange seller is calculated by multiplying a fee, as determined by the host computer, by the units of auction medium to be auctioned by the exchange seller.

28. The system according to claim 26, wherein the fee paid by the exchange bidder is calculated by multiplying a fee, as determined by the host computer, by the units of bid medium offered by the exchange bidder.

29. The system according to claim 26, wherein the exchange seller rejects the bid medium and the exchange bidder has the option to offer the rejected bid medium for auction without paying another fee.

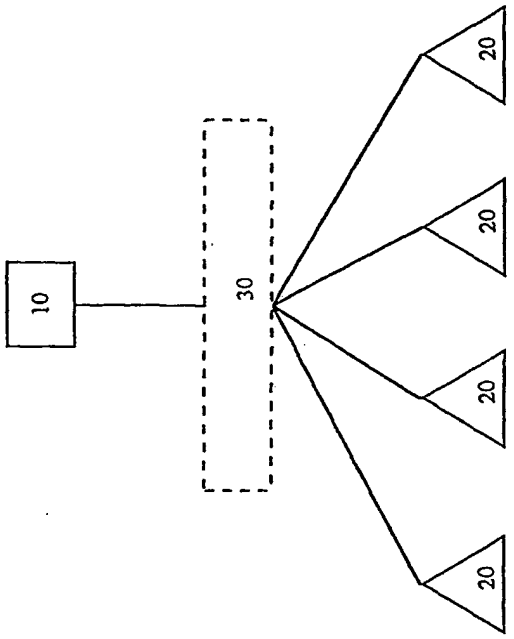
30. The system according to claim 16, wherein the exchange seller offers multiple units of exchange medium for auction.

31. The system according to claim 30, wherein the exchange bidder offers a bid

medium for some or all of the exchange medium units.

32. The system according to claim 16, wherein the monetary value of the auction medium, bidding medium or both media is determined by a third party valuation.

AUCTION EXCHANGE SYSTEM 100



Exchange-Seller 2
Auction Medium 10

Exchange-Seller's Preference(s) 30

Exchange-Bidders 4
Bid medium 20

Fig. 1

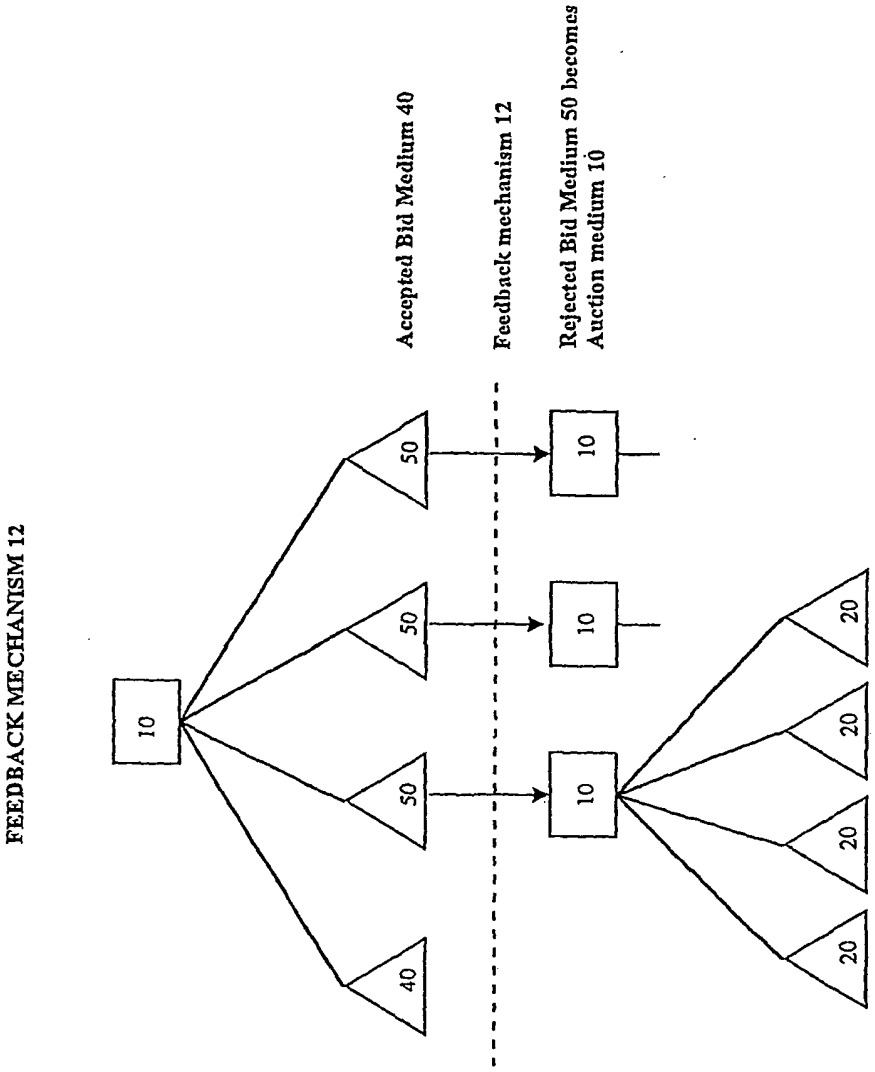

FEEDBACK MECHANISM 12
Accepted Bid Medium 40
Feedback mechanism 12
Rejected Bid Medium 50 becomes Auction medium 10
10
50
50
50
40
10
10
10
20
20
20
20

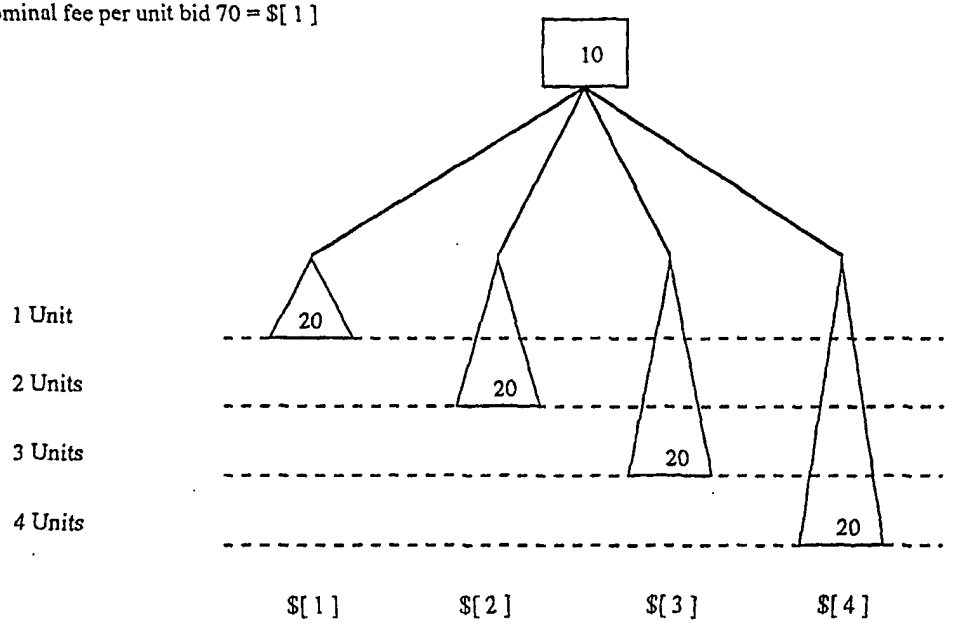
Fig. 2

Fig. 3

UNIT-DRIVEN VALUE DEFINITION 14

Assumptions:

- flat nominal fee per unit on offer 60 = $[2]
- flat nominal fee per unit bid 70 = $[1]



1 unit = $[2]

+ $[10]

Total 82 $[12] [Compensation]

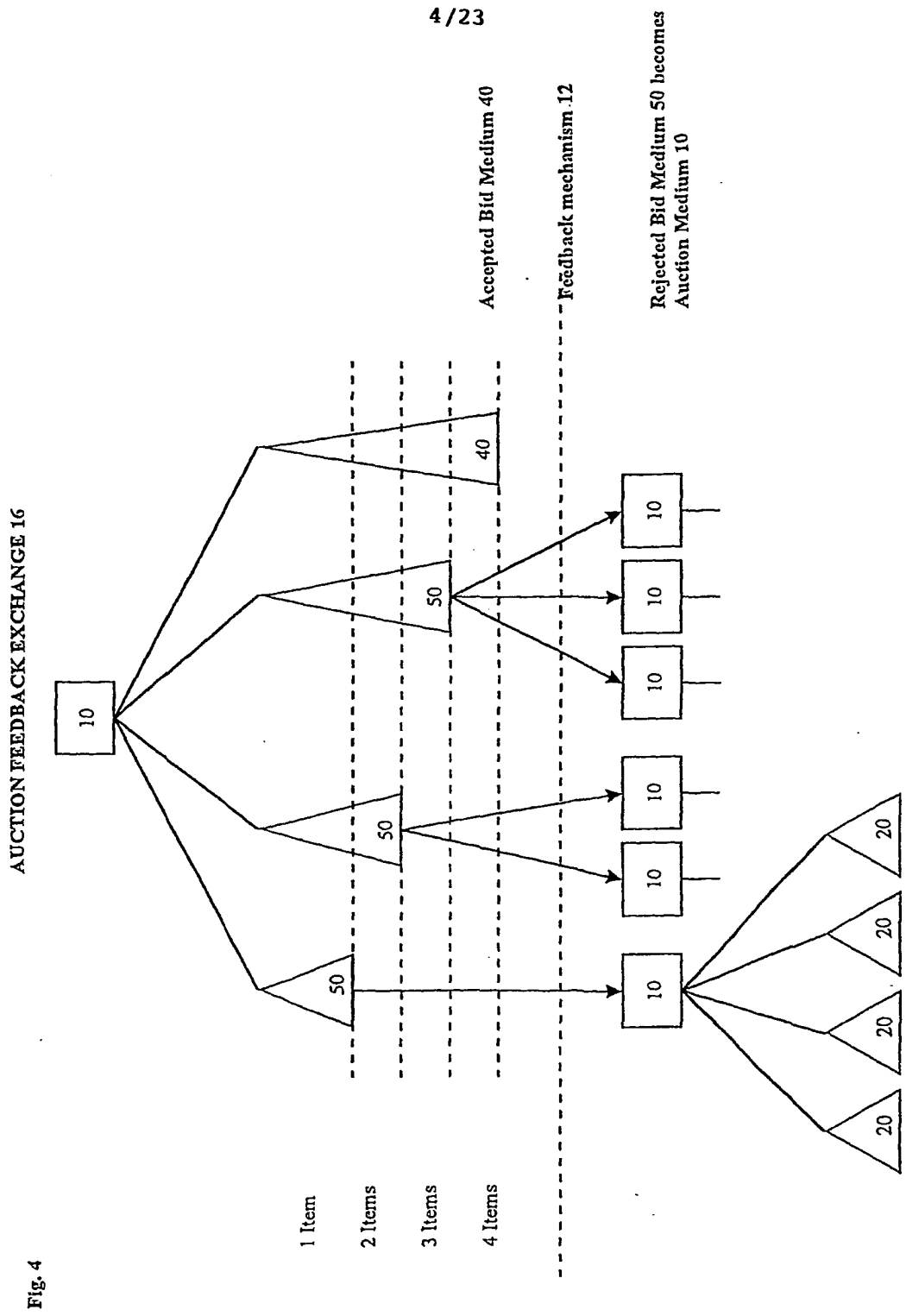

AUCTION FEEDBACK EXCHANGE 16
Accepted Bid Medium 40
Feedback mechanism 12
Rejected Bid Medium 50 becomes Auction Medium 10
1 Item
2 Items
3 Items
4 Items
10
50
50
40
10
10
10
10
10
10
10
20
20
20
20

Fig. 4

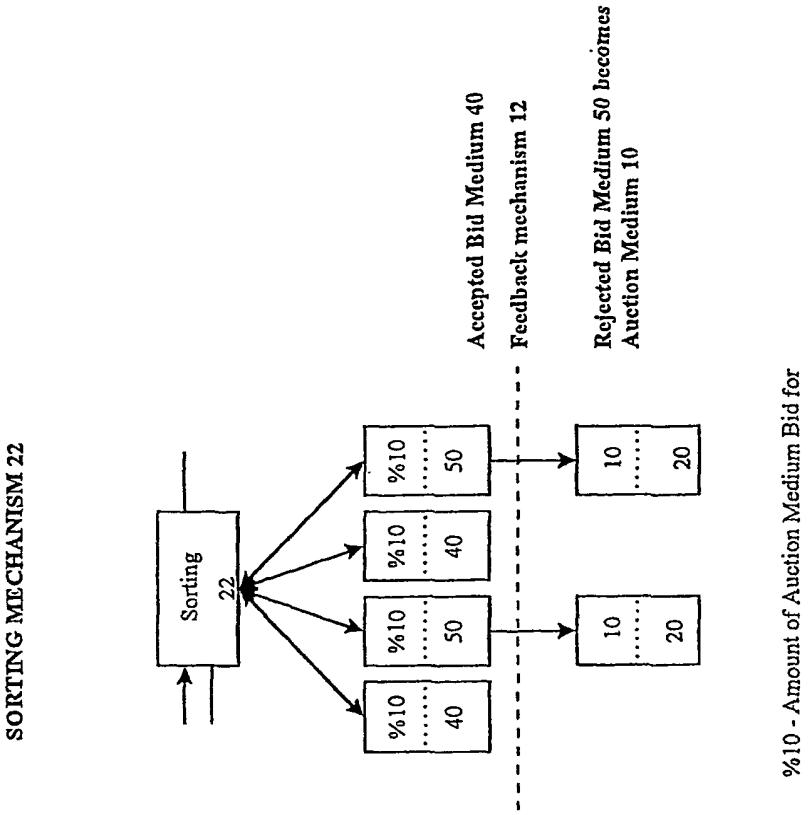

SORTING MECHANISM 22
Sorting
22
%10
40
%10
50
%10
40
%10
50
Accepted Bid Medium 40
Feedback mechanism 12
Rejected Bid Medium 50 becomes
Auction Medium 10
10
20
10
20
%10 - Amount of Auction Medium Bid for

Fig. 5

LINK TO THIRD PARTY VALUE DEFINITION

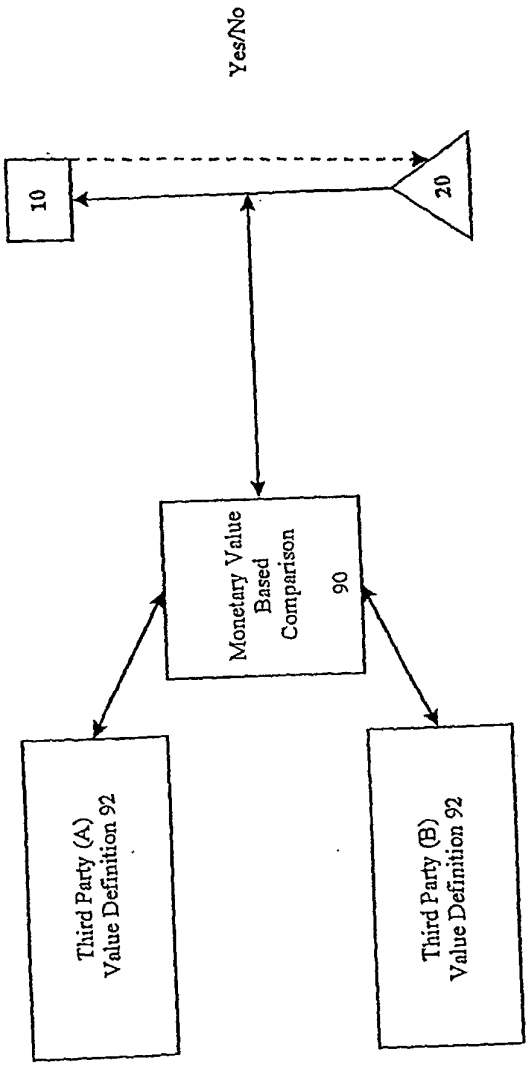
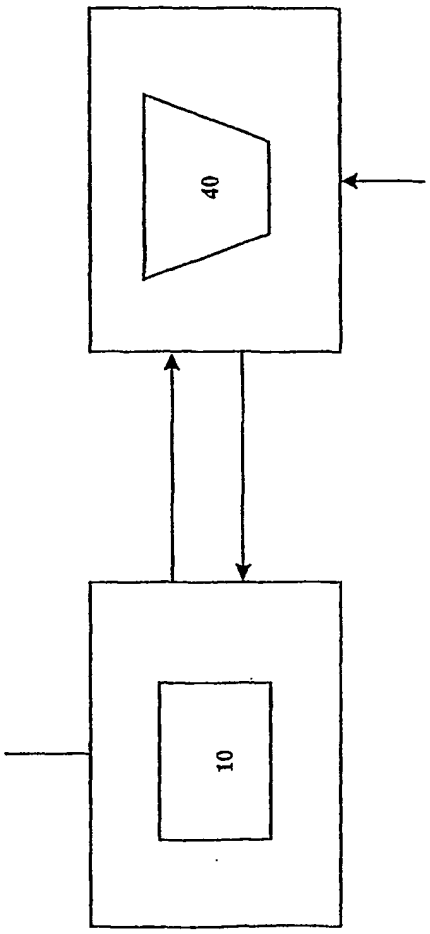


Fig. 6

BASKET AGGREGATION EXCHANGE 84



40 = Unit-Based Bidding Aggregation (Debit) process or basket

10 = Multi-Unit Auction Medium on offer

Fig. 7

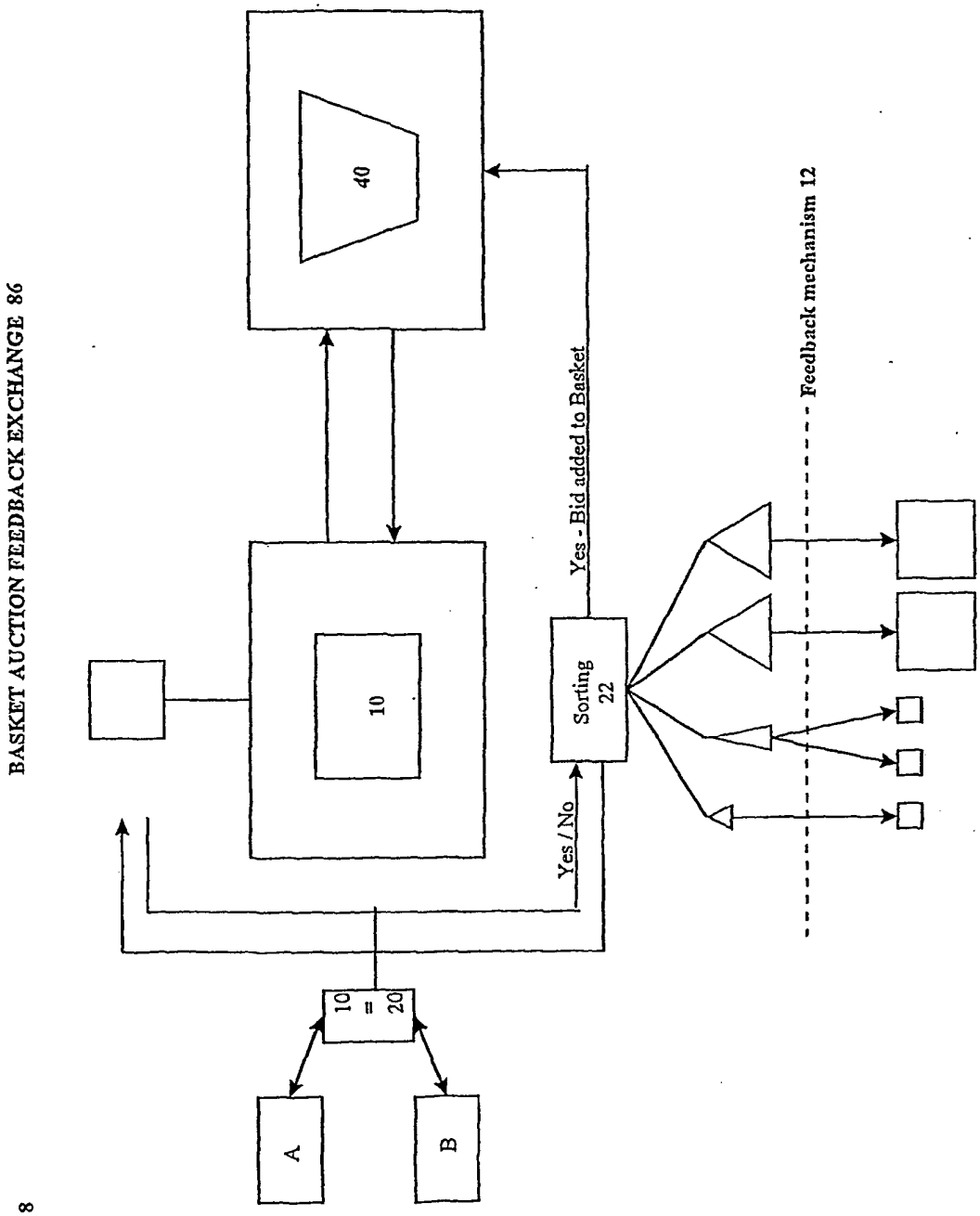
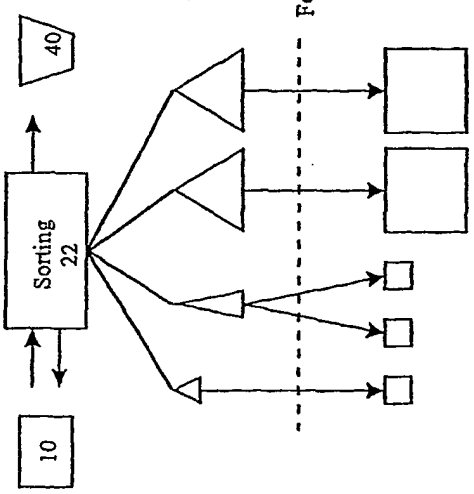

BASKET AUCTION FEEDBACK EXCHANGE 86
40
10
Yes - Bid added to Basket
Sorting
22
Feedback mechanism 12
Yes / No
10 = 20
A
B

Fig. 8

SORTING MECHANISM 22 FOR AUCTION MEDIUM 10 AND BID MEDIUM 20



Definitions:

One Unit of Auction Medium 10

One Unit of Bid Medium 20

Bid medium 20 plus "top ups"

Multiple units of Auction Medium 10

Multiple units of Bid Medium 20

Fig. 9

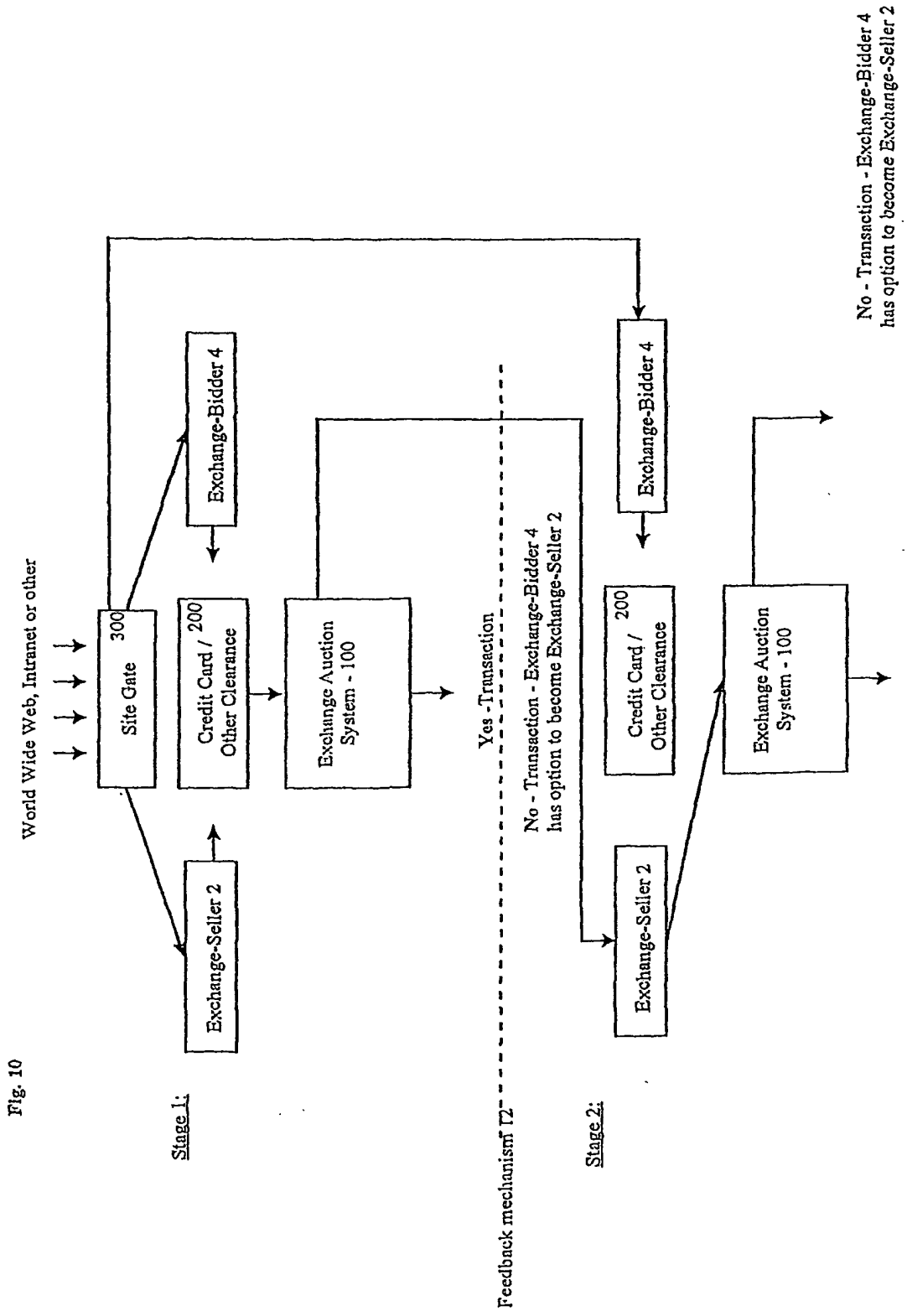

World Wide Web, Intranet or other
Site Gate
300
Credit Card / Other Clearance
200
Exchange Auction System - 100
Exchange-Bidder 4
Exchange-Seller 2
Stage 1:
Feedback mechanism 72
Yes -Transaction
No - Transaction - Exchange-Bidder 4 has option to become Exchange-Seller 2
Stage 2:
Exchange-Bidder 4
Exchange-Seller 2
Credit Card / Other Clearance
200
Exchange Auction System - 100
Yes -Transaction
No - Transaction - Exchange-Bidder 4 has option to become Exchange-Seller 2

Fig. 10

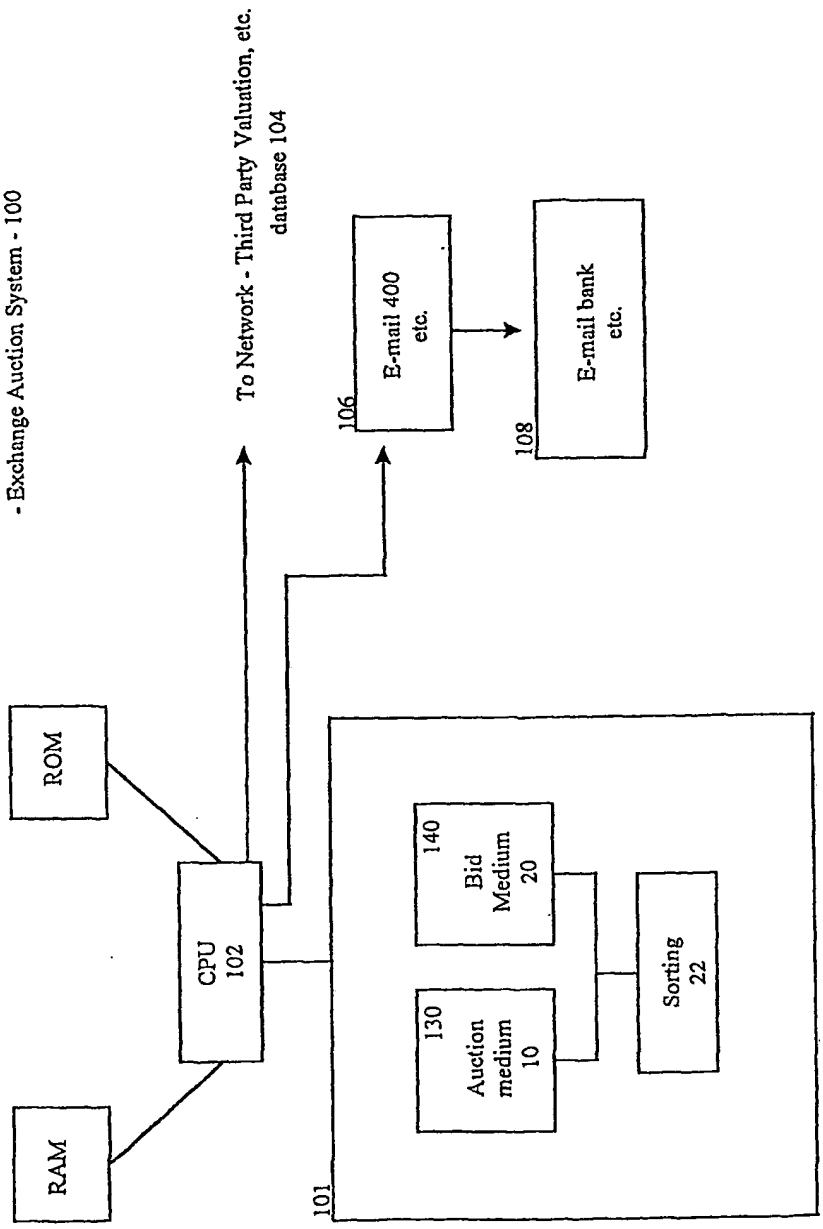

- Exchange Auction System - 100
To Network - Third Party Valuation, etc. database 104
106
E-mail 400 etc.
108
E-mail bank etc.
ROM
CPU 102
RAM
140
Bid Medium 20
130
Auction medium 10
Sorting 22
101

Fig. 11

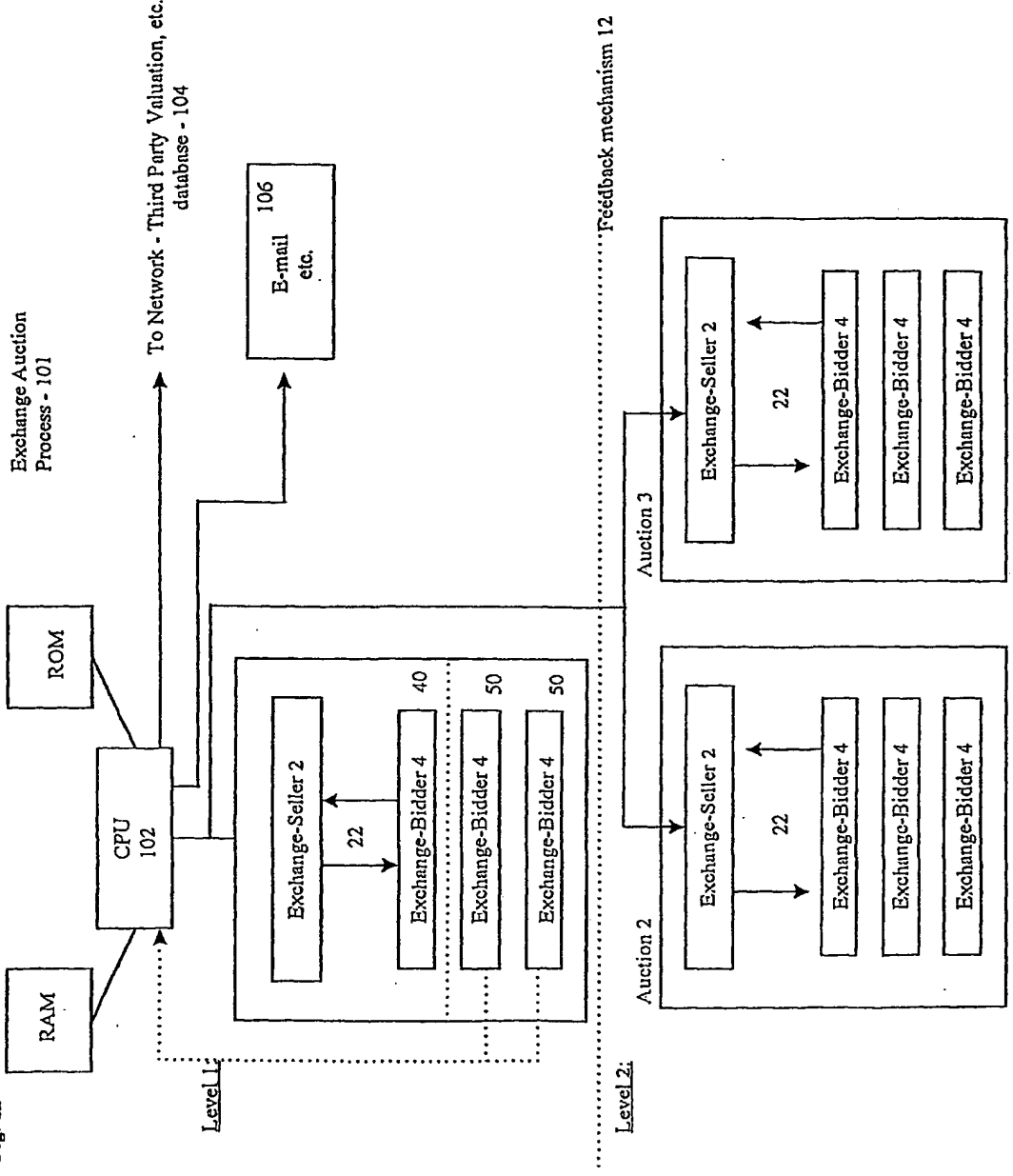
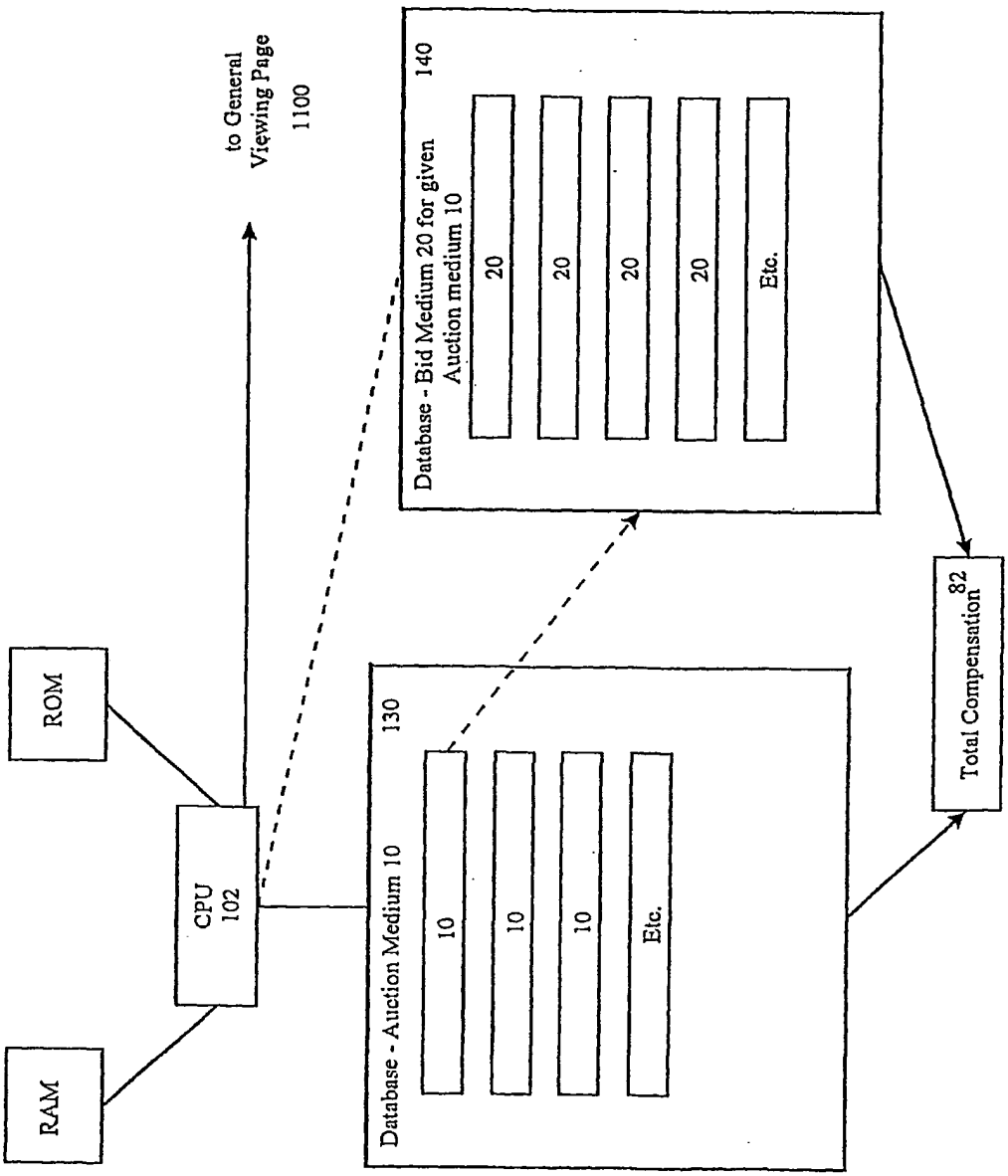

Exchange Auction Process - 101
To Network - Third Party Valuation, etc. database - 104
E-mail etc.
106
Feedback mechanism 12
ROM
CPU 102
RAM
Exchange-Seller 2
22
Exchange-Bidder 4
40
50
50
Auction 2
Auction 3
Level 1:
Level 2:

Fig. 12


to General Viewing Page 1100
Database - Bid Medium 20 for given Auction medium 10 140
20
20
20
20
Etc.
Total Compensation 82
ROM
CPU 102
Database - Auction Medium 10 130
10
10
10
Etc.
RAM

Fig, 13

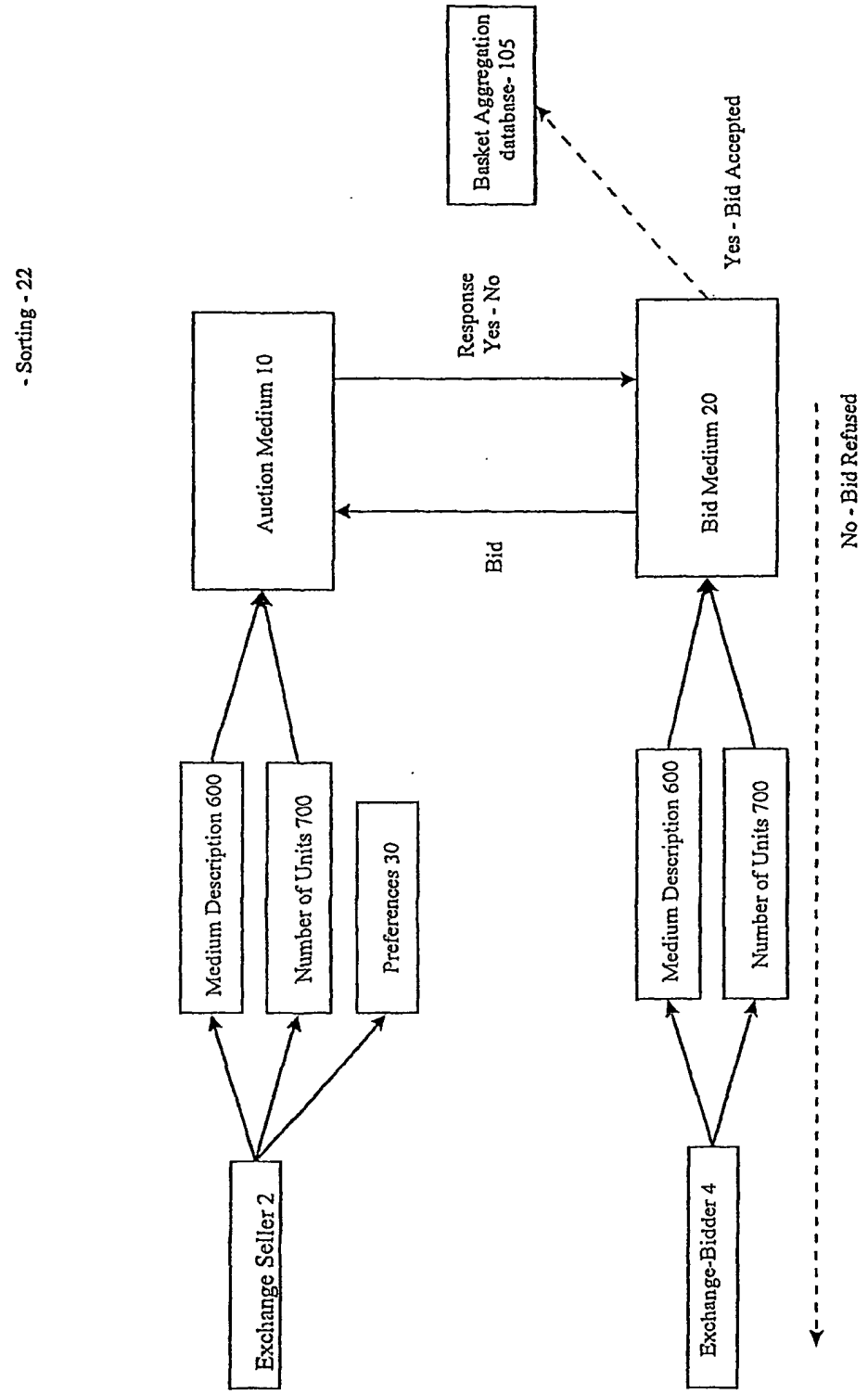

Basket Aggregation database- 105
Yes - Bid Accepted
- Sorting - 22
Response Yes - No
Auction Medium 10
Bid Medium 20
Bid
No - Bid Refused
Medium Description 600
Number of Units 700
Preferences 30
Medium Description 600
Number of Units 700
Exchange Seller 2
Exchange-Bidder 4

Fig. 14

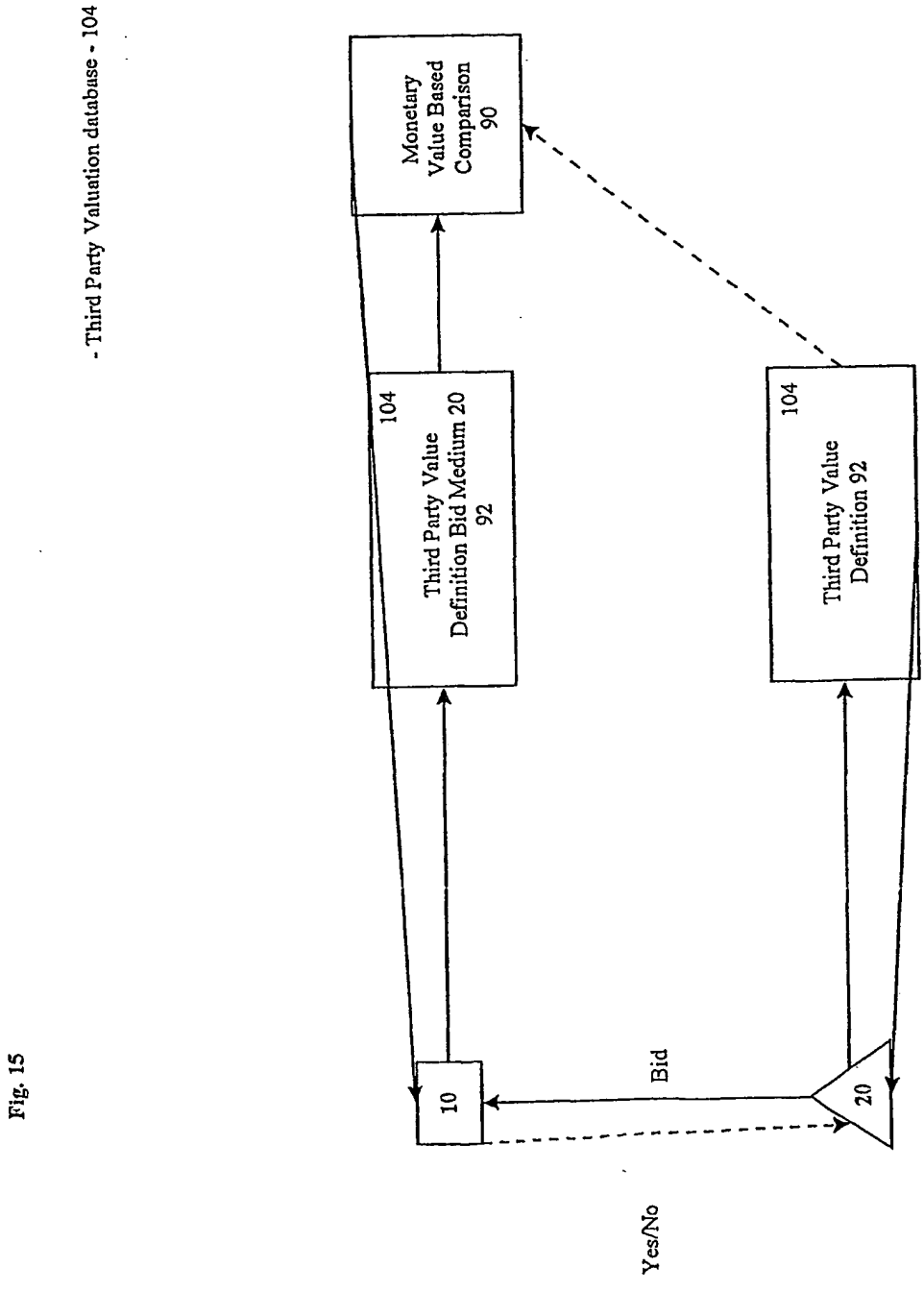

- Third Party Valuation database - 104
Monetary Value Based Comparison 90
104
Third Party Value Definition Bid Medium 20 92
104
Third Party Value Definition 92
10
Bid
20
Yes/No

Fig. 15

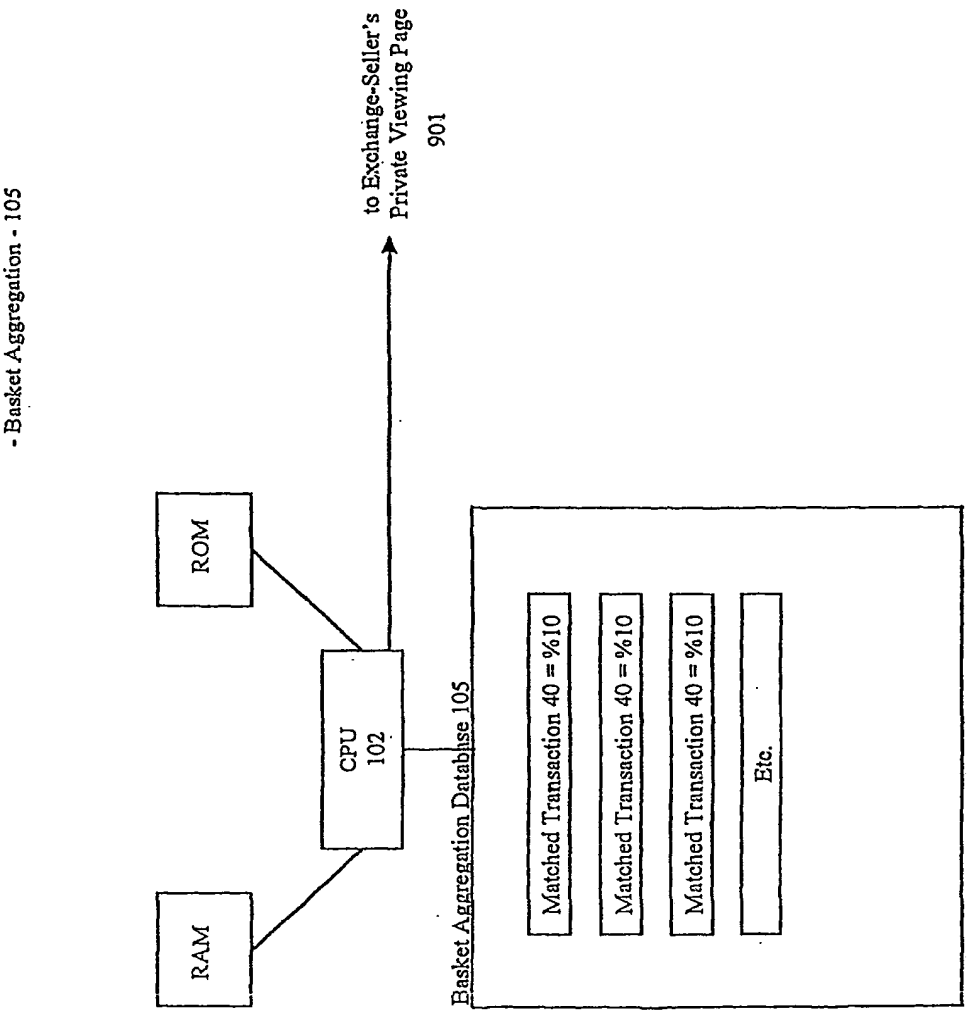

- Basket Aggregation - 105
to Exchange-Seller's Private Viewing Page 901
ROM
CPU 102
RAM
Basket Aggregation Database 105
Matched Transaction 40 = %10
Matched Transaction 40 = %10
Matched Transaction 40 = %10
Etc.

Fig. 16

Fig. 17

- Basic Input Form 950

Physical Ownership - Input

Timing - Physical Ownership Period:

- Transaction Start Date
- Transaction End Date

Owner:

- Main Name
- Forename
- Entity's Name
- Address
- Phone/Fax/E-Mail, etc.

Legal Ownership - Input

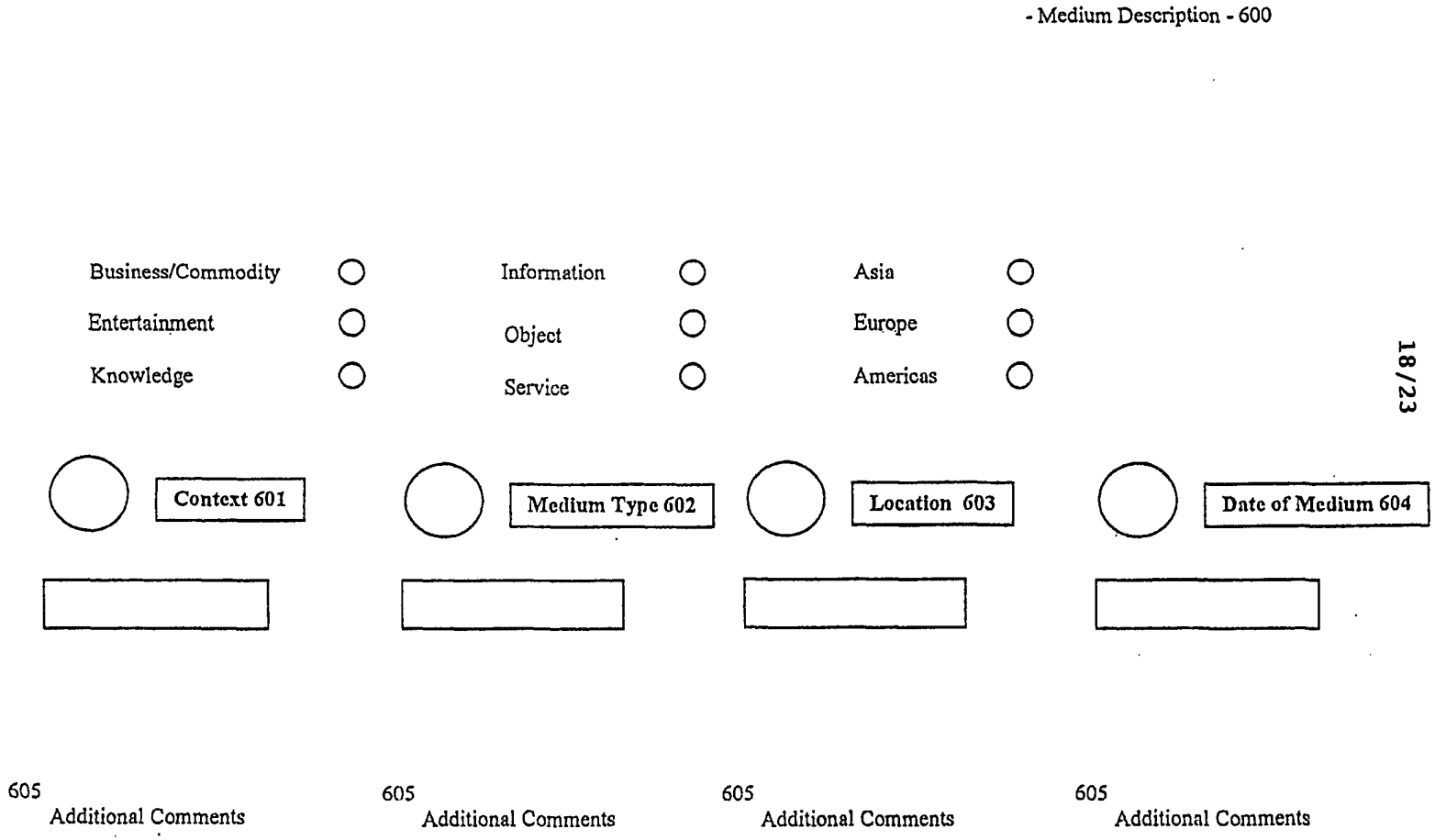
Timing :

- Transaction Start Date
- Transaction End Date

Owner:

- Main Name
- Forename
- Entity's Name
- Address
- Phone/Fax/E-Mail, etc.

Fig. 18


- Medium Description - 600
Business/Commodity
Entertainment
Knowledge
Information
Object
Service
Asia
Europe
Americas
Context 601
Medium Type 602
Location 603
Date of Medium 604
605
Additional Comments
605
Additional Comments
605
Additional Comments
605
Additional Comments

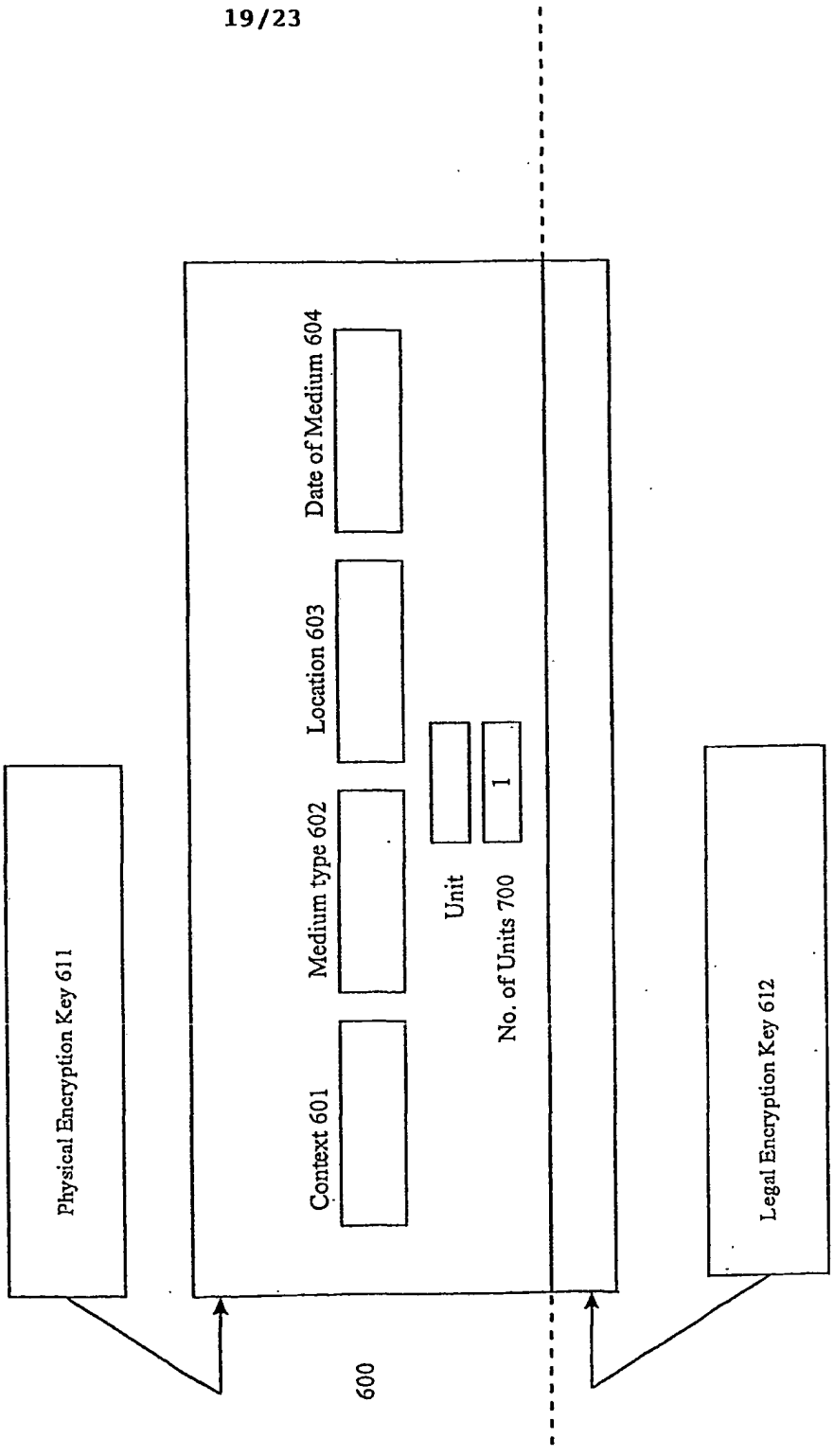

-Bearer Medium Note - 610
Physical Encryption Key 611
Context 601
Medium type 602
Location 603
Date of Medium 604
Unit
No. of Units 700
1
Legal Encryption Key 612
600

Fig. 19

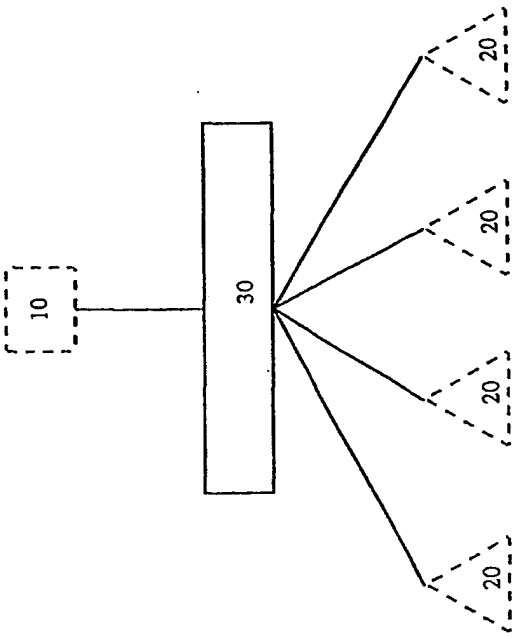

- Preferences - 30
10
30
20
20
20
20
Exchange-Seller 2
Auction Medium 10
Preference(s)
Exchange-Bidders 4
Bid Medium 20

Fig. 20

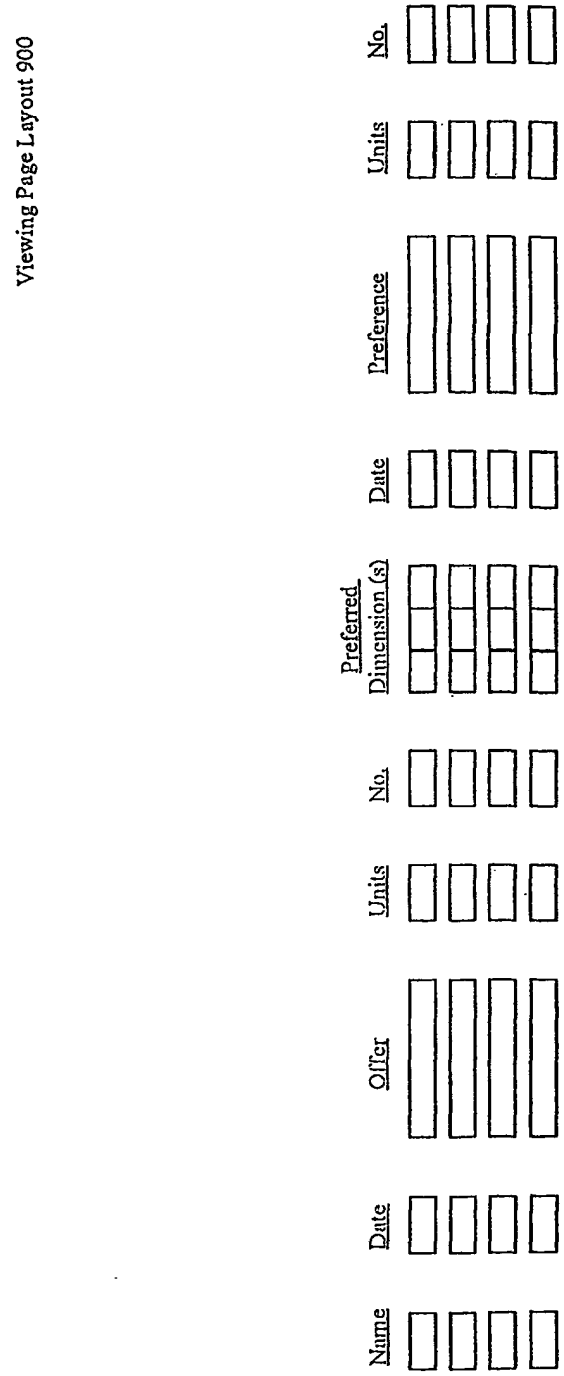

Viewing Page Layout 900
Name
Date
Offer
Units
No.
Preferred Dimension (s)
Date
Preference
Units
No.

Fig. 21

Viewing Page Layout 901

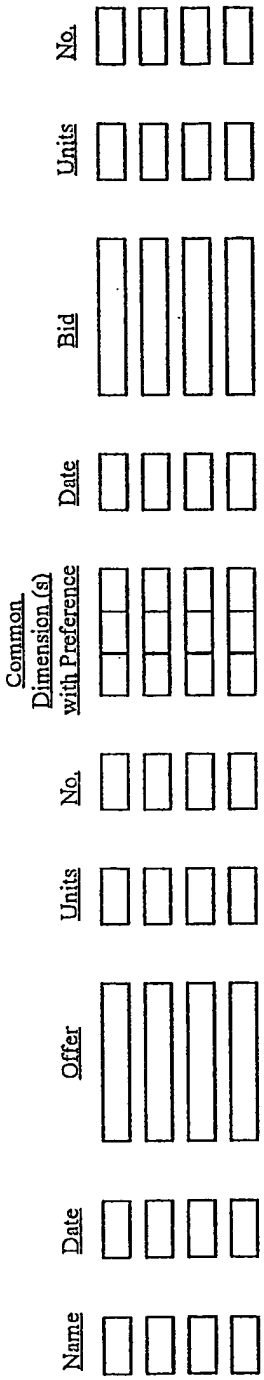


Fig. 22

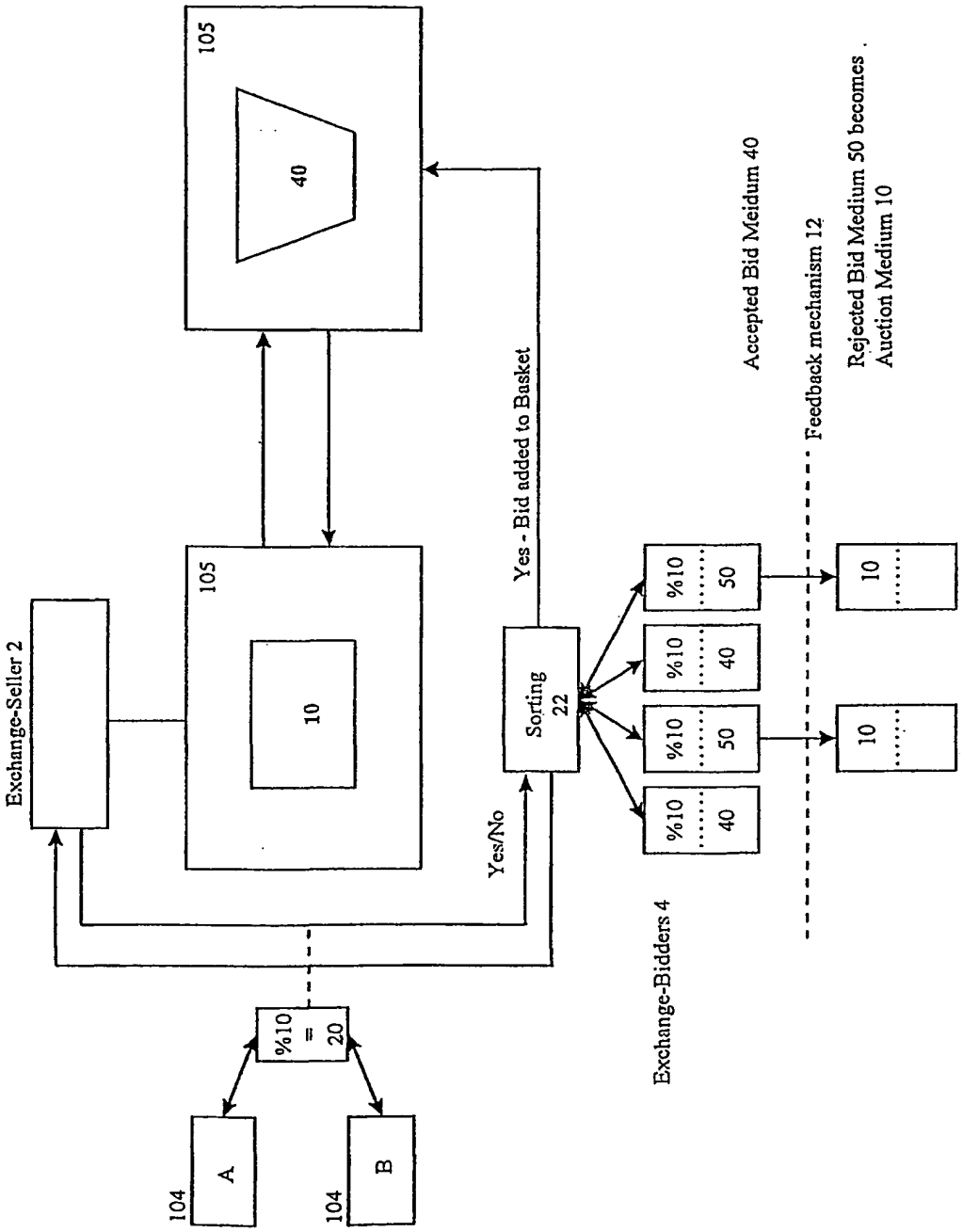

105
40
105
10
Exchange-Seller 2
Yes - Bid added to Basket
Sorting 22
Yes/No
%10 = 20
104
A
104
B
Exchange-Bidders 4
%10 50
%10 40
%10 50
%10 40
Accepted Bid Meidum 40
Feedback mechanism 12
Rejected Bid Medium 50 becomes Auction Medium 10
10
10

Fig. 23